

ACTION RESEARCH

Enhancing the Awareness of Standard V Students
on Diet to treat Iron deficiency through
Traditional Food Fest (TFF)

Action research submitted to

The Director

State Council of Educational Research and Training

Chennai



Researcher

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2023 - 2024

District Institute of Education and Training,

Munanjipatti, Tirunelveli District-627355

Our sincere thanks to

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ACTION RESEARCH

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Title: Enhancing the Awareness of Standard V Students on Diet to treat
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Action Research Report

1. Background of the study

The investigator is working as senior lecturer in the IFIC branch of District Institute of Education and Training, Munanjipatti in Tirunelveli District. In her teaching career spanning over twenty-three years, the researcher has been involved in the noble assignment of molding the future elementary and upper primary school teachers. The researcher is involved in organizing and conducting various needs-based trainings to the upper primary teachers and also gave the academic support during the school visit frequently. In the in-service trainings and classroom observations it has been understood that primary class students were highly anemic. They also find difficult to learn the lessons and show poor attention in the regular classrooms. They often absent to the regular classes. They are not interested in capturing the deep knowledge in it. They were not able to answer the application type of questions like in National Achievement Survey (NAS) and State level Achievement Survey (SLAS) tests. If the teachers understand physical problems, then the students could actively study the lessons. Hence, this action research has been undertaken.

2. Perception of the problem

Science education is very important to the development of any nation. Biology education is very important to any growing economy like India. Science not only makes our life easy in the form of machines but also safe it with the development of vaccination, medicines and different operating instruments. Science teachers should use different strategies as there is no single universal approach for specific task. To build up student interest in science subject it is necessary to correlate it with outside classroom learning. The main aim of the research is to make the students to overcome the difficulties in understating the deficiency of iron and iron rich food. The research is also aim at creating interest in eating traditional iron rich foods. Students' health is critical due to growth spurt, lean body mass development, and onset of menarche. These biological and physiological changes demand an increase in the intake of nutrient-dense foods; however, poor nutrition knowledge by most primary students instigate misguided dietary practices contributing to excessive intake of micronutrient-poor diet. Students in different geographical regions have been shown to have inadequate intakes of micronutrients, such as iron, vitamin C, zinc, potassium, and calcium; thus, they are unable to meet the recommended dietary allowance. So, to promote interest in active participation, listening and learning among the primary students, the investigator selected diet to treat iron deficiency for this action research. The investigator selected fifty-one students of standard V in PUPS, Moolakaraipatti Nanguneri Block in Tirunelveli District for this study The main objective of the study is to explore the awareness on iron rich traditional food to treat the iron deficiency.

3. Analysis of the Problem

The target group of students under consideration for the action research is fifty-one students of standard V in PUPS, Moolakaraipatti, Nanguneri Block in Tirunelveli District. They were less awareness in understanding iron deficiency and iron rich foods. They also find difficult to learn the lessons and show poor attention in the regular classrooms. They often absent to the regular classes. They are not interested in capturing the deep knowledge in it. The difficulty of the primary students in enhancing the awareness of Standard V students on diet to treat Iron deficiency through Traditional Food Fest (TFF).

4. Probable Causes of the Problem

Among various reasons, the researcher has made out the following as the probable causes for the problem under study. It may be due to

1. Lack of interest in understanding the iron rich foods.
2. Poor utilization of iron rich foods.
3. Lack of motivation in understanding the traditional food.
4. Confusion in understanding the iron deficiency
5. Limited usage of visuals related to the iron deficiency.
6. Poor usage of Demonstration method in explaining the iron deficiency
7. Lack of suitable videos on iron deficiency.
8. Limited usage of power points for iron deficiency
9. Avoidance of many visual activities in the classroom process.
10. Availing of gap between theory and practical knowledge.
11. Lack of knowledge in learning the function of body system and iron deficiency.
12. Less awareness in health issues.
13. More usage of junk foods
14. Lack of awareness in eating iron rich foods
15. Less awareness in preparing traditional iron rich foods

5. Development of Propositions

1.

Despite the fact that the researcher has classified the probable causes, he is aware that various facts are operating together in enhancing the awareness on diet to treat iron deficiency. Hence the following approaches are proposed:

1. Motivating the students to active engagement in meaningful learning activities related to iron rich foods
2. Conceptual understanding in taking iron rich foods can increase achievement.
3. Using instructional presentations that incorporate colourful, moving objects and sound effects it can capture students' attention, motivate them to learn, and stimulate them to encode curriculum in dual visual and audio schemas.
4. Students' enjoyment of Visual will produce motivation.
5. Utilization of iron rich foods in natural in the classroom.
6. Demonstration method may use in explaining the iron rich foods
7. Suitable videos may be used on iron rich foods
8. Usage of power points for iron rich foods
9. Many visual activities may follow in the classroom process.
10. Reduce the gap between theory and practical knowledge
11. Using more Visual activities for evaluation.
12. Make more awareness in health issues.
13. Showing videos in explaining the harmful effects of eating junk foods
14. Creating awareness in preparing traditional iron rich foods

6. Action Hypothesis

The awareness of Standard V students on diet to treat Iron deficiency may enhanced through Traditional Food Fest (TFF).

7. Planning for Intervention

The main aim of doing any action research in the field of education is improving the school practices. Having this view in mind, the researcher had opted fifty one students of standard V in PUPS, Moolakaraipatti , Nanguneri Block in Tirunelveli District.

The researcher thought that awareness on in taking iron rich foods at this stage would helpful not only to the students but also to the system itself. The idea of arranging traditional food fest with enrichment activities has been kept in mind so that the students can learn the lessons easily and get rid of the problem gradually. Unlike the usual way of testing the subjects before and after the interventions using questionnaires, observations were made before and after the interventions. In order to have the real effect, the subjects were not informed of the pre-test

8. Execution of Intervention

8.1 Stages Involved

The following stages have been involved in the action research

1. Meeting the Headmaster and the Science handling teachers of the selected school.
2. Preparation of the assessment items
3. Assessing the entry behaviour
4. Identifying the problem of understanding the iron deficiency
5. Planning of intervention.
6. Execution of intervention
7. Assessing the exit behaviour
8. Comparing the performance of the pre-test and post-test scorings and
9. Finding the improvement in making awareness to treat iron deficiency through traditional food festival

8.2. Target Group

The target group consists of fifty-one students of standard V in PUPS, Moolakaraipatti, Nanguneri Block in Tirunelveli District. The target group includes 28 female and 23 male students.

8.3. Tools Used

In order to mark out the improvement of the target group under study in understanding the iron rich foods, a pre-test was prepared and administered at the entry and exit behaviour of the time of solving the problem, before and after interventions. The test consisted questions that are needed for understanding importance of iron rich foods. Similar test was used in the post-test with a minor change in the sentences. It was found that in pre-test there is low

achievement in the competency. After conducting pretest, intervention was given to students with enrichment activities.

8.4 Interventions

The interventions used in this study are Ortho Lab Model cum Enrichment Activities

Traditional Food Fest – Schedule

Session 1 Doctor’s Talk

Day/ date	Session Title	Content	TFF Activity
Day 1	1. Iron	Importance and functions	Pre-Test Doctors gave a talk on importance of iron deficiency anemia, importance, causes and remedies
		Types	
		Deficiency	
Day 2	2. Anaemia	Causes, signs and symptoms, consequences, and prevention	Health workers gave a talk on iron rich foods for school children
		3. Food sources of iron	
Day 3	4. Foods that increase iron absorption	Animal sources	Traditional Food Festival Display of prepared traditional iron rich foods by the investigator, teachers, health workers, students and parents Explanation by the investigator about iron enhancing factors Display of iron enhancing foods by the investigator,
		Plant sources	
		Foods sources	
Day 4	5. Foods that decrease iron absorption	Micronutrient that aids iron absorption	Explanation by the investigator about food inhibiting factors Display of iron inhibiting foods by the investigator,
		Role of iron-enhancing foods	
		Food inhibitory factors	
Day 5	6. Review	Foods sources	1. Power point Presentation by the investigator 2.Preparationof work sheets 3. Prerecorded you Tube videos 4. Evaluation through visuals Post-Test
		Role of iron-inhibiting foods	
		Relevant previous knowledge	

Dr. A. Varatharajan, MD(S), Community Health Officer, Ayush Health & Wellness Centre, Munanjipatti delivered a talk on iron deficiency anemia signs and symptoms

Iron Deficiency Anemia

Red blood cells carry oxygen to the body's tissues. Iron can produce enough hemoglobin in red blood cells that enables them to carry oxygen. Iron deficiency anemia is a condition in which blood lacks adequate healthy red blood cells due to insufficient iron. Initially, iron deficiency anemia can be so mild that it goes unnoticed. But as the body becomes more deficient in iron and anemia worsens, the signs, causes, symptoms and remedies in detail

Signs and Symptoms of Iron deficiency anemia

- Extreme fatigue
- Weakness
- Pale skin
- Chest pain, fast heartbeat or shortness of breath
- Headache, dizziness or lightheadedness
- Cold hands and feet
- Inflammation or soreness of your tongue
- Brittle nails
- Unusual cravings for non-nutritive substances, such as ice, dirt or starch
- Poor appetite, especially in infants and children with iron deficiency anemia

How does Anemia affect the body?

When someone develops anemia, they're said to be anemic, meaning they have symptoms of anemia, like being very tired or feeling cold all of the time. Anemia affects different people in different ways:

Causes of Iron deficiency anemia

Iron deficiency anemia occurs when the body doesn't have enough iron to produce hemoglobin. Hemoglobin is the part of red blood cells that gives blood its red color and enables the red blood cells to carry oxygenated blood throughout your body. If the consumption of iron is less, or losing too much iron, body can't produce enough hemoglobin, and iron deficiency anemia will eventually develop. The body regularly gets iron from the foods we eat. If we consume too little iron, over time our body can become iron deficient. Examples of iron-rich foods include meat, eggs, leafy green vegetables and iron-fortified foods.

Complications of Iron Deficiency

For proper growth and development, infants and children need iron from their diets, too. Children need extra iron during growth spurts. If children isn't eating a healthy, varied diet, they may be at risk of anemia. In infants and children, severe iron deficiency can lead to anemia as well as delayed growth and development. Additionally, iron deficiency anemia is associated with an increased susceptibility to infections.

Session 2 Counselors' Talk

D.Maharajan, PGD(Yoga), M.Sc(Yoga), Yoga Instructor, Ayush Health and Wellness Centre, Government Primary Health Centre, Munanjipatti delivered a talk on iron rich foods.

Iron rich foods

We can reduce your risk of iron deficiency anemia by choosing iron-rich foods. Foods rich in iron include:

- Red meat, pork and poultry
- Seafood
- Beans
- Dark green leafy vegetables, such as spinach
- Dried fruit, such as raisins and apricots
- Iron-fortified cereals, breads and pastas
 - Peas
 - nuts and seeds.
 - dried fruit.
 - wholemeal pasta and bread.
 - legumes — such as mixed beans, baked beans, lentils and chickpeas.
 - dark leafy green vegetables — such as spinach, silver beet and broccoli.

Types of Iron Rich Foods

- **Heme iron.** This type of iron comes from hemoglobin. Heme is better absorbed by the body and is commonly found in liver, meat, egg, poultry and seafood,
- **Non-heme iron.** “Non-heme iron is commonly found in legumes (beans), nuts, seeds fortified sources such as grains, bread, wheat products, enriched rice, whole wheat bread and cereals

Iron-rich fruits include:

- Figs.
- Dates.
- Raisins.
- Prunes and prune juice.

Iron-rich vegetables

- Broccoli.
- String beans.
- Dark leafy greens, like dandelion, collard, kale and spinach.
- Potatoes.
- Tomato paste.
- Cabbage

Other foods rich in iron

- Blackstrap molasses.
- Pumpkin seeds.
- Sesame seeds.
- Flax seeds.
- Almonds.
- Cashews.
- Pine nuts.
- Macadamia nuts.
- Hemp seeds.

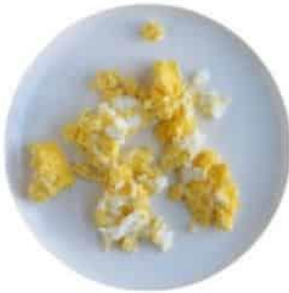
Diagnosis

To diagnose iron deficiency anemia

Hemoglobin. Lower than normal hemoglobin levels indicate anemia. The normal hemoglobin range is generally defined as 13.2 to 16.6 grams (g) of hemoglobin per deciliter (dL) of blood for men and 11.6 to 15 grams (g) of hemoglobin per deciliter (dL) of blood for women.

Iron Recommended Value

Age	Iron Daily Recommended Value
Birth–6 months	0.27 mg
7–12 months	11 mg
1–3 years	7 mg
4–8 years	10 mg
9–13 years	8 mg
14–18 years	15 mg for females, 11 mg for males



SCRAMBLED EGG



SWEET POTATO



PEAS



OATMEAL



TOFU



MEAT



BEANS



CHICKEN

Iron rich foods

IRON RICH FOODS



GRAINS



RED MEAT



LEAFY GREENS



SHELLFISH



EGG YOLKS



COOKED SPINACH



GREEN PEAS



BROCCOLI



BRUSSELS SPROUTS



DRIED FRUITS



LEGUMES



POULTRY

SOURCES OF IRON

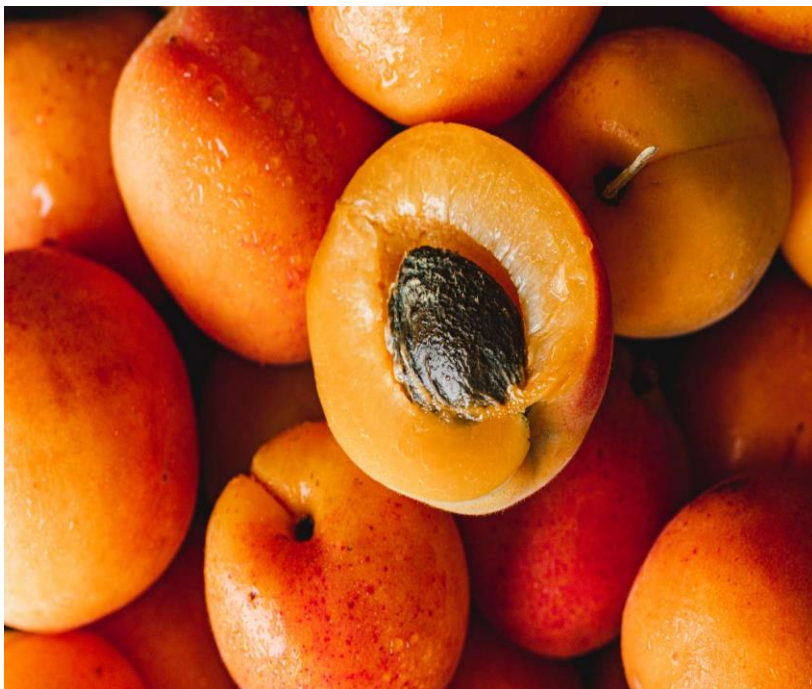
Add Vitamin C foods to enhance iron absorption



Kids Eat in Color



Raisins



Apricots

Session 3 Power Point Presentation

The investigator explained the foods that enhances and inhibits the iron absorption through the power point presentation.

Foods that rich in vitamin C to enhance iron absorption

Absorption of iron by body's may enhanced through drinking citrus juice or eating other foods rich in vitamin C. Vitamin C in citrus juices, like orange juice, helps your body to better absorb dietary iron.

Vitamin C is also found in:

- Broccoli
- Grapefruit
- Kiwi
- Leafy greens
- Melons
- Oranges
- Peppers
- Strawberries
- Tangerines
- Tomatoes

Foods that inhibits the iron absorption

Inhibition of iron may take place by consumption of coffee and tea after taking meals.

MENTION FOODS CONTAINING VITAMIN C

- ✘ Broccoli
- ✘ Grapefruit
- ✘ Kiwi
- ✘ Leafy greens
- ✘ Melons
- ✘ Oranges
- ✘ Peppers
- ✘ Strawberries
- ✘ Tangerines
- ✘ Tomatoes

WHAT IS THE RELATION BETWEEN IRON AND VITAMIN C

- ✘ **vitamin C enhances iron absorption**
- ✘ Absorption of iron by drinking citrus juice or eating other foods rich in vitamin C with high-iron foods. Vitamin C in citrus juices, like orange juice, helps your body to better absorb dietary iron.

Power Point Presentation

Session 4 Traditional Food Fest

Traditional Food Festival was arranged by the investigator and display of prepared traditional iron rich foods by the investigator, teachers, health workers, students and parents

Preparation of Food for Food festival

ABC juice (Apple, Beet root and Carrot).

This is called miracle drink / liver tonic / anti-aging drink. Having this juice twice week rejuvenates body..It is recommended for cancer cure, heart diseases and perfect complexion. It supplements brain functioning and lung functioning. The combination of apple, beet and carrot gives a long term health. The power of two vegetables and one fruit is like a super power. It gives you Vitamin A, B1, B2, B6, B3 C, E , K, Folate, Niacin, Zinc, Copper, Magnesium, Potassium, Phosphorus, Iron, Calcium, Sodium, Potassium, Magnesium, Selenium, beta-carotene and Manganese.

Receipe

Ingredients:

- Apple-1
- Beet root-1/2(medium sized)
- Carrot-1(medium sized)

Procedure:

- 1.Wash all the ingredients well.
2. Peel the skin of beet and carrot.
3. Grate them and add to a blender.
4. When you are about to add everything to blender peel apple and grate.

5. Just blend them together with some water.

6. Filter it and transfer to a serving glass



Benefits of ABC Juice

- It provides all nutrients essential for your brain development, boosting our memory and proper functioning of brain.
- This drink is hope for cancer patients. It is known for slowing down cancer cells growth.
- The drink helps in proper functioning of the liver, heart, kidney and pancreas.
- It helps in reduction of cholesterol and there by shields the heart. This is aided by components like alpha and beta carotene which is present in the drink.
- Women who suffer from menstrual cramps must have this juice to witness a remarkable difference.
- It prevents our from spots of skin, pimples and helps in anti aging. It definitely results in glowing of skin.

- This drink helps in boosting the immunity system and there by keeps you away from allergies.
- This fights anemia and improves your hemoglobin.
- It is a natural detox drink and hence it makes you glow just like a pink rose.(This can be your regular drink if you are trying to hit the gym to shed some pounds. (With the right nutritionist's advice)
- It aids in digestion and relieves you of all digestive tract issues.
- It works great for your eyes and totally cures dryness of eyes,irritation,itching. For people who indulge in works with their eyes glued to screens this drink is a must have atleast once in a week.

Traditional Ragi Dosa

Milletts like ragi have more iron content. The instant ragi dosa has been a traditional food in the family.

- Ragi flour - 3/4 cup
- Rice Flour-1/4 cup
- Water-As needed
- Salt-To taste
- Onion-1/4 cup(chopped)
- Oil-To cook

Procedure:

- 1. Mix ragi flour and rice flour together.
- 2. Add water and mix it without lumps and make into a dosa batter consistency
- 3. Add salt , onion and mix well.
- 4. Heat dosa tawa and grease dosa pan with oil.

- 5. Pour the batter using a small cup and spread on the dosa tawa.
- 6. Close it with a lid and cook



Samai Ideappam

Ingredients:

- Saamai Arisi/Barnyard Millet-1 cup
- Salt -To taste
- Water-As needed

Procedure:

1. Dry roast barnyard millet until an aroma arises.
2. Let it cool and grind it into a fine powder in mixer.
3. Heat water in a bowl and add salt to it.
4. When it becomes lukewarm, add to the flour and finely knead into a dough.
5. Role it in balls and use the idiyappam maker and squeeze out the string hoppers.

6. Using idly cooker/idly maker steam the string hoppers.

7. Serve it with sugar and grated coconut.



Instant Energy Ball

Ingredients:

- Dates-3
- Raisins-10
- Almonds-8
- Pista-6
- Cashews-10

Procedure:

1. Deseed dates and separate the pulpy part.
2. In a dry mixer add cashews, raisins, almonds, pista.



3. Give it a run or until they become a coarse powder.
4. Keep it aside.
5. Add dates and raisins to the same jar.
6. Run the mixer to get them mashed.
7. Mix coarse powder with mashed raisins and dates.
8. Roll it into balls or make it as bars.



Benefits

This can be your snack or as a filler during travel and festive recipe.

Dry fruits for children are an excellent way to get them nourished.

Ensure to have introduced all ingredients separately before hand for babies.

Avoid milk up to 2 hours after having this.

Take care not to puree the dates and raisins.

If blended right no part of this will stick to your jar. But ensure not to make it as a paste.

Ragi Keerai Adai

Ingredients:

- Ragi Flour-1 cup.
- Shallots-1/2 cup (Finely chopped)
- Tomato-1/2 cup(finely chopped)
- Green Chilly-2(Finely chopped)
- Keerai/drumstick leaves-1/2 cup(Finely chopped)
- Salt-To taste
- Oil-To cook

Procedure:

1. Add oil in a kadai and fry chopped shallots and green chilly/red chilly until it turns golden brown.
Let it cool.
2. In a mixing bowl add salt,ragi flour, chopped keerai and fried chilly+shallots.
3. Add water little by little and mix the flour.
4. The dough has to be kneaded smooth and soft like chappathi dough.
5. The consistency should be perfect enough to be spread with hands .
6. Take a plastic sheet/banana leaf , grease with oil and spread the dough with your palm.
7. Heat a dosa tava and cook this add by sprinkling oil and flipping both side

This is a heavy dish. So prefer it for breakfast.

Session 5 Review and Evaluation

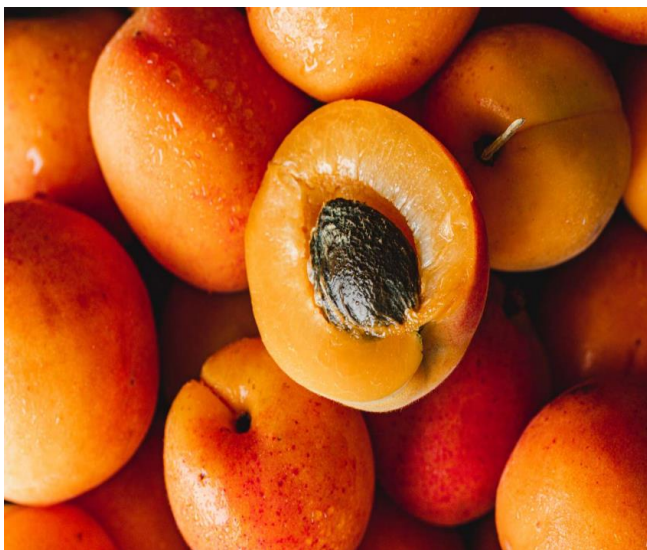
After conducting the sessions on talk about iron deficiency anemia, importance, causes, iron rich foods and remedy for iron deficiency

Visual Evaluation Activity 1

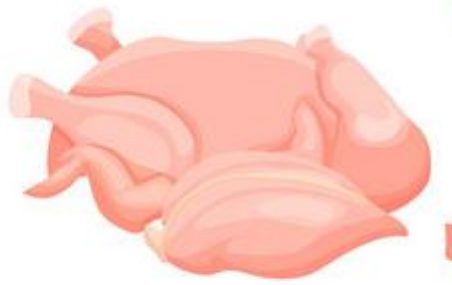
Name the iron rich food



.....



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.....



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.....

8.5 Statistical Techniques Applied

The following statistical techniques were used for analyzing the collected data in the form of Pre-tests and Post-tests.

8.5.1 Percentage Analysis

In order to find out the percentage of students having low, average and high level of achievement, the percentage analysis has been made use of in this action research.

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100} \quad \text{or} \quad \frac{\text{part}}{\text{whole}} = \frac{\%}{100}$$

Percentage formula

8.5.2 Arithmetic mean

The researcher has used the following formula for calculating arithmetic mean.

Sum of all of the numbers of a group, when divided by the number of items in that list is known as the Arithmetic Mean or Mean of the group. When a variable X takes the values $x_1, x_2, x_3, x_4, \dots, x_n$, the average value of X is given by the formula,

$$\bar{X} = \frac{x_1 + x_2 + x_3 \dots + x_n}{N}$$

Where, X is the mean, and

N is the number of values.

8.6 Duration of Interventions

Since this action research is a method of enhancing in understanding the iron deficiency and intake of iron rich foods, seven days were given for activities. Enough time was provided to strengthen each component of improving the content.

8.7 Evidences Collected

The researcher could analyse the understanding of content in iron rich foods. In order to collect and record their understanding level their scores were recorded in the form of two tests- Pre-test and Post-test.

9. Data collection and analysis

The collected data were processed and analyzed with the help of percentage, frequency, mean, and graphical representation in order to find out the meaningful interpretation of the raw scores. They are presented systematically in the following pages.

After conducting all these activities gradually and sequentially for one week, a post test was conducted to assess the acquired knowledge. By evaluating the pre-test and post-test scripts and comparing the performance to find the effectiveness of Traditional Food Fest

After giving the treatment, the post test was conducted to the students. The performance in the pre-test and post-test was given below

Table: 1 Performance of students in the pretest and post-test

S.No	Name of the student	Pre - Test	Post - Test
		100	100
1	Vaikunda Muthu Raja D	25	100
2	Sanfren I	10	50
3	Eshanth Madhavan M	35	100
4	Afran Jawahar.M	45	90
5	Muthuselvan	15	45
6	Sweetson J	25	85
7	Mahendran S	10	90
8	Jeeva Dharsan S	45	100
9	Mara Bath M	30	65
10	Isaiyarasan P	15	60
11	Inba Narayana M	20	90
12	Sabaraiah M	30	90
13	Arumugam V	25	75
14	Krishna Moorthy S	20	40
15	Sankaran E	30	95
16	Sivabalan T	35	70
17	Esakki Raj E	30	100
18	Siva M	35	85
19	Kesavan A	30	70
20	Vinay Ragavan M	10	60

21	Ajay S	35	100
22	Sankara Vel Pandi S M	35	65
23	Arunkumar A	10	85
24	Mukisha S	25	80
25	Sumitha v	35	85
26	Anu Darshini M	05	70
27	Muthuselvi M	05	35
28	Preetha P	30	70
29	Gopika M	40	100
30	Vasuki M	30	100
31	Muthu Esakki Maharasi M	40	100
32	Aarathana L	25	90
33	Padmalakshmi E	30	70
34	Perundevi M	30	65
35	Indira P	25	90
36	Karthika A	30	100
37	Harini S	30	75
38	Saraswathi E	25	85
39	Karthika M	40	80
40	Muthu saranya P	40	100
41	Raadhana V	40	80
42	Ramalakshmi B	25	75
43	Subalaya malathi M	25	80
44	Sivani M	31	90

45	Rajalakshmi K	26	75
46	Salaa Jonia A	30	85
47	Nanthini M	30	75
48	Sai Atharva	25	85
49	Deepika G	15	85
50	Yoalin R	30	80
51	Karthika A	30	81
Total		1392	4096
Mean		27.3	80.3

The above table shows the performance of students in the pretest mean is 27.3 and the mean of posttest is 80.3

Table: 2 Pretest – Post test Mean Comparison

Test	Target Group	Mean
Pre - test	51	27.3
Post - test	51	80.3

Fig: 1 Pretest – Post test Mean Comparison- Graphical Representation

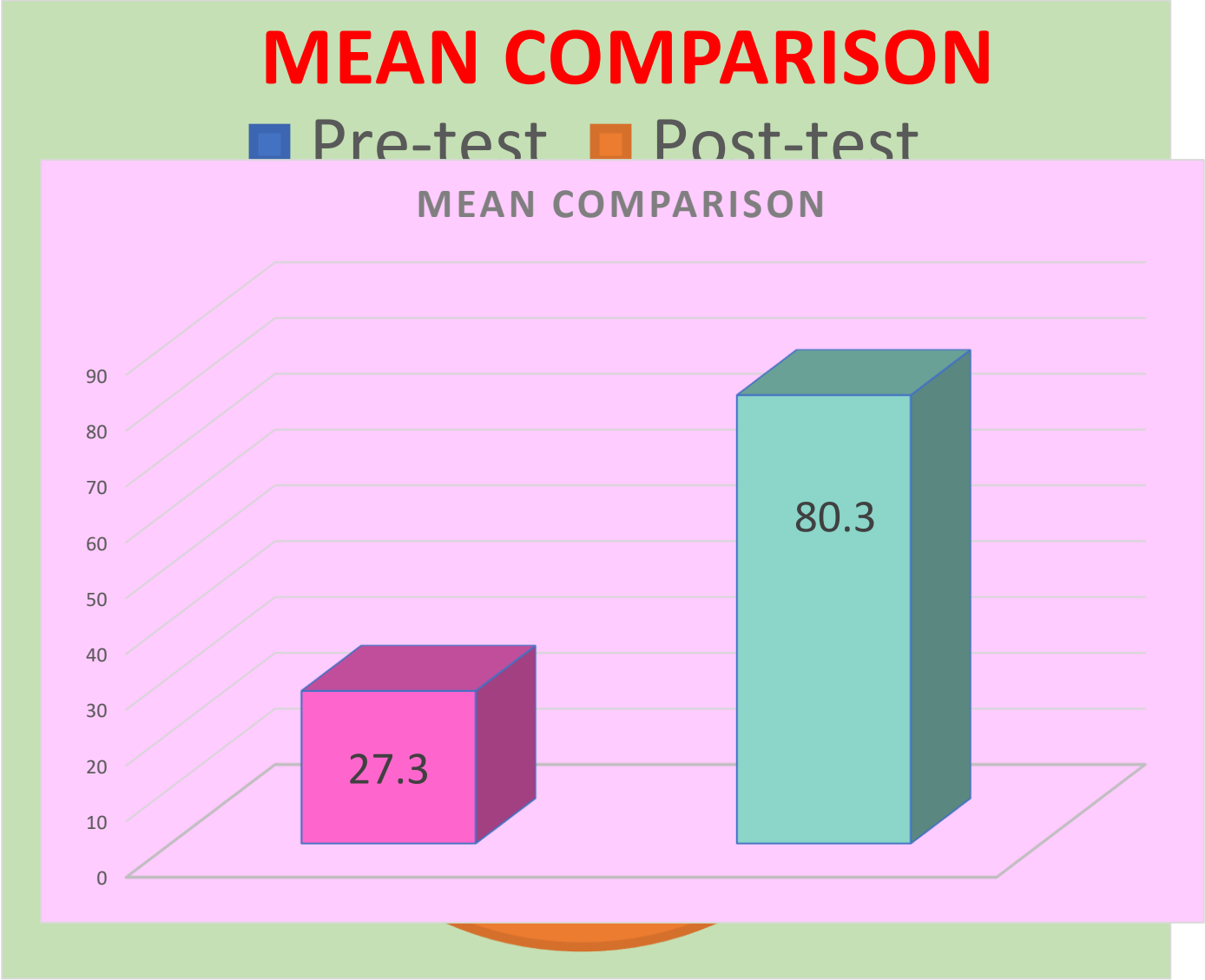


Fig: 2 Pretest – Post test Mean Comparison- Graphical Representation

Table: 3 Pretest – Post test Marks frequency Comparison

Marks frequency	No. of Students	
	Pre test	Post test
0-10	6	0
11-20	5	0
21-30	25	0
31-40	13	2
41-50	2	2
51-60	0	2
61-70	0	11
71-80	0	10
81-90	0	14
91-100	0	10

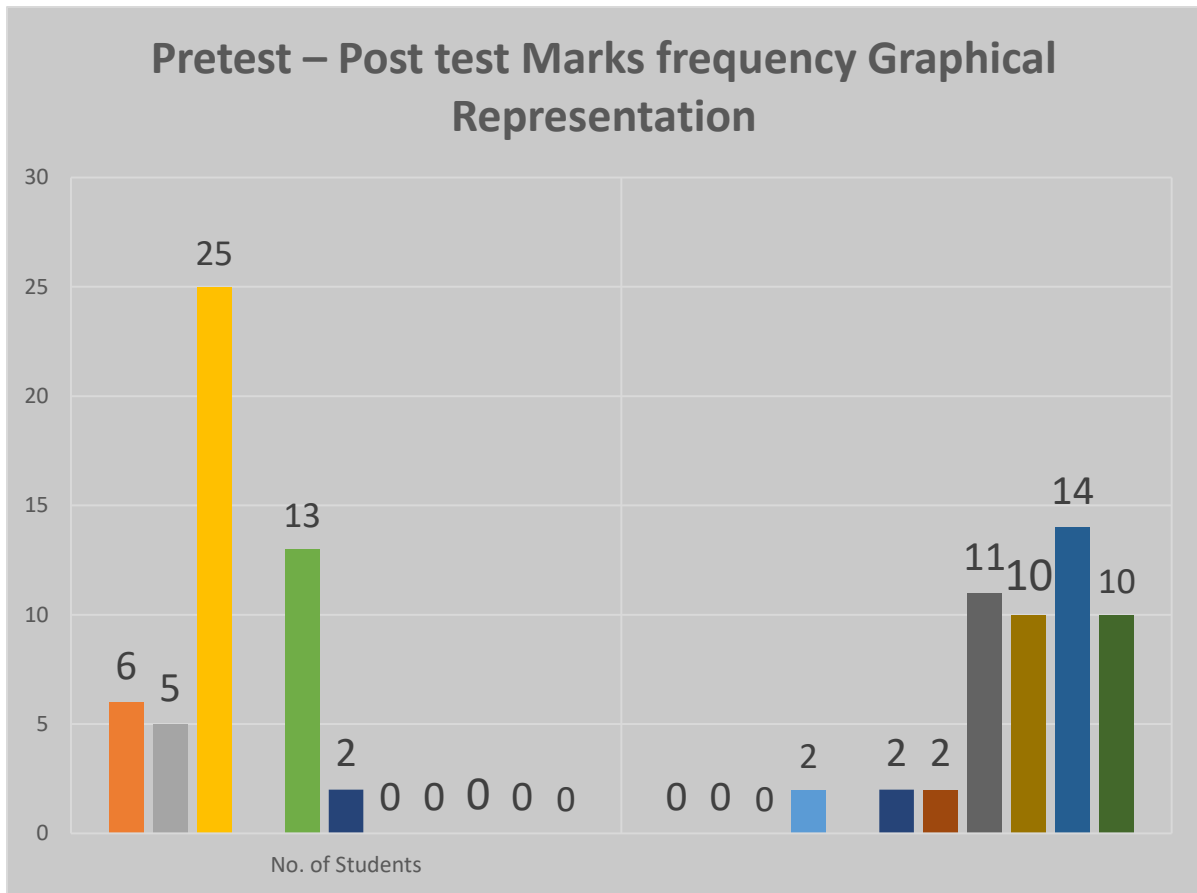


Fig: 3 Pretest – Post test Marks frequency Graphical Representation

The obtained posttest means 80.3 is greater than the pretest mean value 27.3. In the pretest 11 students got below 30 marks. 25 students got 21-30, 13 students got 31-40 and 2 students got 41-50. In the post test no students got below 30 marks. 2 students got 31-40 marks, 2 students got 41-50 marks, 2 students got 51-60 marks, 11 students got 61-70, 10 students got 71-80, 14 students got 81-90 and 10 students got 91-100 marks. So, it was found that there is significant difference between pretest and posttest of experimental group.

Table: 4 Classification of Level of Academic Achievement

Subject Classification	Test	Level of Academic Achievement					
		Below Average		Average		Above Average	
		Frequency	%	Frequency	%	Frequency	%
Target Group	Pre-test	11	22	40	78	0	0
	Post-test	0	0	17	33	34	67

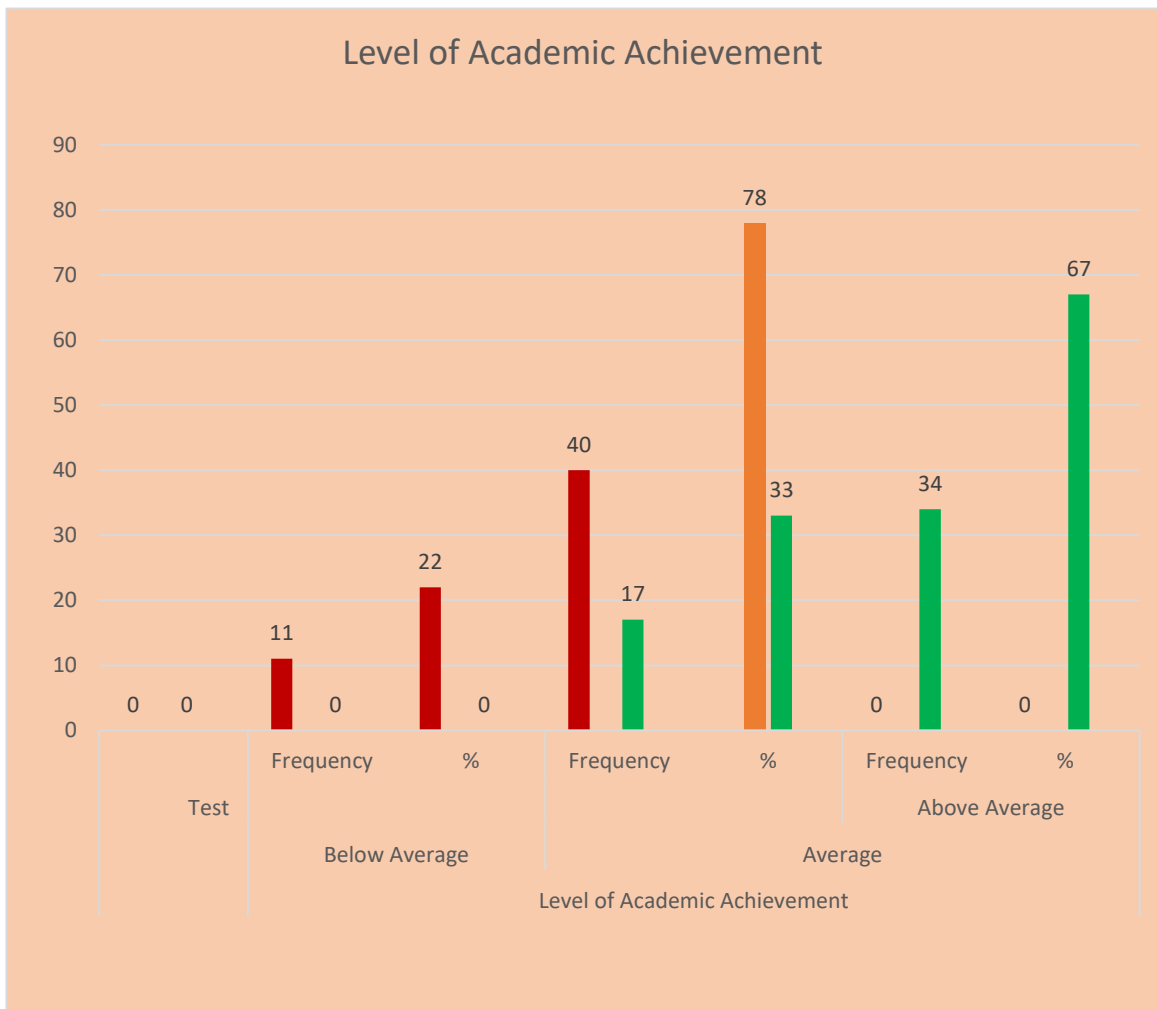


Figure: 4 Classification of Level of Academic Achievement

It is informed from the above table that 22 percent of the students were under below average only in pre-test. On the contrary 0 percent of the students were under below average, 78 percent of students were in average in pretest and 33 percent of students were in average in posttest. In pretest no students were above average and 67 percent of students were above average in posttest. Through the interventions traditional food festival and doctors' speech and enrichment activities may enrich the transacting achievement of in posttest is creditably higher than the pretest. All the students show improvement in their performance. The traditional food festival and enrichment activities in explaining has considerably improved the understanding. The graphical representation shows the importance of traditional food festival and enrichment activities.

10. Decision making and reflection

It is evident from the data analysis that the fifty-one students of Standard V of Panchayat Union primary School, Moolakaraipatti from Nanguneri Block in Tirunelveli District. who were taken as the target group for the study have improved their understanding of awareness on diet to treat iron deficiency iron deficiency effectively. The inventions have brought about improvement to a maximum level. As the researcher has preplanned, the interventions have gradually yielded the expected progress among the target group. Their achievement level of developing the skill had developed. Hence the researcher has decided to end the action research and not to proceed further to the next spiral.

All the students who underwent the treatments have enhanced the understanding the awareness on diet to treat iron deficiency and they express in their day-to-day life activities.

11. Termination

In the beginning of the action research, the researcher felt the dissatisfaction with the students in understanding the diet to treat iron deficiency. They were unable to identify the foods rich in iron. The researcher thought that if traditional food festival and enrichment activities are used effectively, the student's awareness on diet to treat iron deficiency will certainly be enhanced.

Accordingly, the intervention was planned and executed giving enough time and the result was fully satisfactory, hence, the researcher decided to terminate the action research and the net result becomes the end of interventions.

12. Net Gains

The researcher has listed out the following as the net gain of the present effort in terms of

i. People who have benefited,

ii. Materials that were developed,

iii. Situations that have improved and

iv. Certain strategies tested which can be shared among well-meant people.

- This study helps in many ways to the teachers. This study helps the teachers in explaining the iron deficiency diseases and its treatment through Traditional Food Festival and enrichment activities.
- This study makes awareness to the students. This study helps the students to understand the iron deficiency anaemia, importance, causes, symptoms and remedial measures to treat iron deficiency through iron rich foods through Traditional Food Festival and enrichment activities.
- The hands-on experience in preparing iron rich recipe cause effectiveness in understanding diet to treat iron deficiency. This will develop the achievement level of the students.
- The chief beneficiaries of this action research were fifty one students of Standard V of Panchayat Union primary School, Moolakaraipatti from Nanguneri Block in Tirunelveli District.
- Particularly, they have learnt to identify the foods rich in iron and procedure of preparing food.
- The students under gained confidence in appearing the examination.
- The net gain of this action research to the school is that it has contributed to the total quality of education.

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<http://www.designbasedresearch.org/reppubs/DBRC2003.pdf>

Enhancing the Awareness of Standard V Students on Diet to treat Iron deficiency through Traditional Food Fest (TFF) – Action Research 2023-24

COLLABORATORS

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2. Dr. G. Anto Boopalarayan,
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District Institute of Education and Training
Vanaramutti, Thoothukudi



3. Dr. Jeena James
Principal,
District Institute of Education and Training
Theroor, Kanyakumari



4. Mrs. P. Kathija Mehar Banu,
Headmistress,
Panchayat Union Primary School,
Moolakaraipatti, Nanguneri Block



Annexure

Annexure

**District Institute of Education and Training, Munanjipatti,
Tirunelveli District**

Action Research 2023-24

Pre-Test / Post-Test

Subject: Science

Standard: V

Topic: Iron Deficiency

Time: 1 hour

Marks: 20

1. Name some foods rich in iron
2. Name some iron deficiency diseases
3. Mention foods containing vitamin C
4. What is the relation between iron and vitamin C
5. Mention the relation between hemoglobin and anaemia
6. What is the normal hemoglobin range of male and female

7. Mention the signs and symptoms of Iron deficiency anemia

8. How will you prevent you from anemia?

9. How does a doctor identify iron deficiency as externally?

10 Name some iron-inhibiting foods

Photo Gallery

**District Institute of Education and Training, Munanjipatti,
Tirunelveli District-627355**

Enhancing the Awareness of Standard V Students on Diet to treat Iron deficiency through Traditional Food Fest (TFF) – Action Research 2023-24



Investigator Dr. M.T.Manjula Devi, Senior Lecturer conducting Pre-test



PUPS, Moolalkaraipatti Standard V students writing Pre-test



Investigator Dr. M.T.Manjula Devi, Senior Lecturer giving Interventions



D.Maharajan, PGD(Yoga), M.Sc(Yoga), Yoga Instructor, Ayush Health and Wellness Centre, Government Primary Health Centre, Munanjipatti- Iron Rich Foods



D.Maharajan, PGD(Yoga), M.Sc(Yoga), Yoga Instructor, Ayush Health and Wellness Centre, Government Primary Health Centre, Munanjipatti- Yoga



Students observing the power point presentation



Students undergone Activities



Students undergone Activities



Investigator Dr. M.T.Manjula Devi, Senior Lecturer giving Interventions



Investigator Dr. M.T.Manjula Devi, Senior Lecturer giving Interventions



Dr. A. Varatharajan, MD(S), Community Health Officer, Ayush Health & Wellness Centre, Munanjipatti deliver speech on Iron deficiency





**Traditional Food Festival in PUPS, Moolakaraipatti- Observation by
Dr. G. Anto Boopalarayan, Principal, DIET, Munanjipattion**



Traditional Food Festival in PUPS, Moolakaraipatti with Teachers and DIET Faculties



Interaction on Iron deficiency diseases in classroom



Traditional Food Festival in PUPS, Moolakaraipatti- Iron Rich Foods Display



Traditional Food Festival in PUPS, Moolakaraipatti- Students Participation



Traditional Food Festival in PUPS, Moolakaraipatti- Iron Rich Foods



Traditional Food Festival in PUPS, Moolakaraipatti



Traditional Food Festival in PUPS, Moolakaraipatti



**Traditional Food Festival in PUPS, Moolakaraipatti with
Mrs. P. Kathija Mehar Banu, Headmistress, Panchayat Union Primary School,
Moolakaraipatti,**



**Traditional Food Festival in PUPS, Moolakaraipatti- Observation by
Dr. B. Manoharan, Lecturer, DIET, Munanjipatti**

ABSTRACT

ACTION RESEARCH ABSTRACT -2023-2024

1. DIET : Munanjipatti
2. Faculty : Dr. .M.T. Manjula Devi ,Senior Lecturer, DIET, Munanjipatti
3. Title: : TVL 04- Enhancing the awareness of Standard V students on Diet to treat
Iron deficiency through Traditional Food Fest (TFF).

4. Summary

a) Introduction:

Students' health is critical due to growth spurt, lean body mass development, and onset of menarche. These biological and physiological changes demand an increase in the intake of nutrient-dense foods; however, poor nutrition knowledge by most adolescents instigate misguided dietary practices contributing to excessive intake of micronutrient-poor diet. Adolescents in different geographical regions have been shown to have inadequate intakes of micronutrients, such as iron, vitamin C, zinc, potassium, and calcium; thus, they are unable to meet the recommended dietary allowance.

b) Rationale/ Need for the Study:

To prevent iron deficiency anaemia in adolescents, food preference factors such as knowledge about food, dieting, body image, level of maternal education, parental influence, and eating with family and peers have to be well managed. Food intake practices among adolescents have strong linkages with socioeconomic status, food taste, flavour, food skills, and food availability. Adolescents showed inadequate intake of fruits, vegetables, and animal sources of foods while increasing intake of saturated fat, sugar, and salt. A study demonstrated that poor knowledge of nutrition

by early adolescents affects dietary habits. Nutrition education targeting students' health has the potential to enhance their well-being into adulthood. This study assessed the impact of nutrition education on the knowledge of iron and iron-rich food intake practices of students.

c) Objectives:

i) To enhance the awareness of standard V students about iron rich foods to treat iron deficiency

ii) To learn the effectiveness of Traditional Food Fest (TFF) to treat iron deficiency of standard V students

d) Sample

51 Standard V students in

e) Methodology

Single group – pretest – Interventions - posttest – Experimental method.

f) Major findings

The obtained posttest mean 80.3 is greater than the pretest mean value 27.3. So, it was found that there is significant difference between pretest and posttest of experimental group. It is informed that 22 percent of the students were under below average only in pre-test. On the contrary 0 percent of the students were under below average, 78 percent of students were in average in pretest and 33 percent of students were in average in posttest. In pretest no students were above average and 67 percent of students were above average in posttest. Through the interventions traditional food festival and doctors' speech and enrichment activities may enrich the achievement in

posttest is creditably higher than the pretest. All the students show improvement in their performance. The traditional food festival and enrichment activities in explaining has considerably improved the understanding the iron deficiency diseases and the diet to treat the iron deficiency. This study helps the teachers in explaining the iron deficiency diseases and its treatment through Traditional Food Festival and enrichment activities. This study makes awareness to the students. This study helps the students to understand the iron deficiency anaemia, importance, causes. symptoms and remedial measures to treat iron deficiency through iron rich foods through Traditional Food Festival and enrichment activities. The hands-on experience in preparing iron rich recipe cause effectiveness in understanding diet to treat iron deficiency. This will develop the achievement level of the students.

Dr. M.T.Manjula Devi, Senior Lecturer

Dr. A. Varatharajan, MD(S), Community Health Officer,



Traditional Food Festival